



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/665,837

09/18/2003

Jeffrey L. Conroy

902.0137.U1(US)

6742

29683 7590 10/30/2007  
HARRINGTON & SMITH, PC  
4 RESEARCH DRIVE  
SHELTON, CT 06484-6212

EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

10/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/665,837	<b>Applicant(s)</b> CONROY ET AL.	
	<b>Examiner</b> Martin J. Angebranndt	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 7/30/07 & 8/20/07.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-22,24-29,44-46,48-50 and 52-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-22,24-29, 44-46,48-50 and 52-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1795

1. The response of the applicant has been read and given careful consideration. Responses to the arguments are presented after the first rejection to which they are directed. Rejections of the previous office action not appearing below are withdrawn based upon the arguments and amendments.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 12 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

“3 mol propoxylated” and “3 mole ethoxylated” in claim 12, should read - - tripropoxy - - and - - triethoxy- - respectively. (claim 12)

Please delete “(5.5)” in claim 12.

Please correct the following chemical names “ditrimethylolpropane” (claim 12), and “cholorbenzotria zol”, “benzotraizole”, “propionate”, “benzotr- iazole”, octoxybenzophenone”, “2’hydroxy-5’methacryloxyethylphenyl” (in claim 15).

In claim 8, please replace these tradenames with their chemical composition.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

Art Unit: 1795

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,3-22,24-29,44-46 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '536, in view of Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968.

Usami et al. '536 teaches with respect to figure 1, a processing line for optical recording media including a embossing area (12A and 12B), stations for forming the recording layer and the reflective layers, a spin **coater** for the UV curable composition, a **UV ray curing apparatus** and a **defect inspection apparatus** including inspection for defects in the protective layer surface and a sorting means for separating acceptable and defective media based upon the output of the defect detection means [0051]. The defect inspection means transmits the results to the sorting means and the defect detection means utilizes detects light reflected from the media using a CCD camera. [0097]. The formation of a label using printing is disclosed [0099].

Krasulak WO 99/65696 describes a **CD coated with an ink** using spin coating, a, LCD mask is then used to mask 780 nm radiation, which **colors the ink in the exposed area and this is followed by a UV exposure at 308 nm to cure the entire layer and fix the image.** (3/22-38). This is described for a negative mask and may be performed using a series of applications of colorless inks which develop cyan, magenta, yellow and black images upon the imaging

exposure. This may be images, decoration and may include watermarks, (5/11-21). The use of CD burners with this is disclosed (5/8-10).

Cescon et al. '454 teach in example 2 a composition including o-Cl-HABI, Tris(p-N,N-diethylamino-o-tolyl)methane, p-toluene sulfonic acid, pentaerythritol triacrylate, pyrenequinone, trimethyl nitilotripropanate and polyvinyl pyrrolidone, which is cast on a polyetster support, provided with a protective layer and then imaged using a stencil and a Xenon lamp filtered to transmit 240-420 nm to form a deep blue colored image, followed by a fixing exposure at wavelengths of 350 nm which polymerizes and fixes the composition. (27/50-28-20). The use of various wavelengths for the imaging and fixation exposures is disclosed including light sources, such as xenon, mercury, Black Lite, carbon arc lamps and examples 3-7 exemplify the use of two different light sources. (21/38-63). The absorption of the biimidazoles is disclosed as maximum at 235-285 nm extending into the blue (16/12-42). The usefulness of this invention is to provide permanent images, including text and graphics and have the benefit of not requiring wet development of the image. (23/11-34 & 35/55-36/57). Useful acrylates including polyoxyethated trimethylol propane triacrylate, and various diacrylates. (14/4-71).

Emge et al. '968 teach with respect to figure 1 the use of serial laser exposures to provide markings of various colors with the marked object being transported between exposures to create a (full) three color image (5/40-7/16). The transfer of the ink using 975 nm, while the red, curing light (670 nm) cures the ink is disclosed (8/51-9/15).

There is clearly information and the products exchanged between the different stations in the inline processing apparatus of Usami et al. '536 and the examiner holds that it would have been obvious to modify the processing line for forming optical recording media by to allow the

Art Unit: 1795

use of the compositions of Cescon et al. '454 as the UV cured protective layer, by adding a UV imaging station with a stencil to image the layer prior to the curing/fixation station which is also filtered to allow the labeling of the media with a reasonable expectation of success based upon the use by Krasulak WO 99/65696 of a similar process to mark CDs and the like and the teaching of serial marking stations by Emge et al. '968 where the articles are transported between the stations on a belt.

Alternatively, it would have been obvious to modify the inline processing apparatus of Usami et al. '536 and the examiner holds that it would have been obvious to modify the processing line for forming optical recording media by to allow the use of the compositions of Cescon et al. '454 as a label by adding a coating, station, a filtered UV imaging station with a stencil to image the layer, a UV curing/fixation station which is also filtered, prior to the coating and curing of the UC curable protective layer to allow the labeling of the media with the image protected by an overcoat with a reasonable expectation of success based upon the use by Krasulak WO 99/65696 of a similar process to mark CDs and the like and the teaching of serial marking stations by Emge et al. '968 where the articles are transported between the stations on a belt.

Further, the use of a stencil is taught by Cescon et al. '454, direct laser writing by Emge et al. '968 and LCD masking by Krasulak WO 99/65696, so each of those embodiments is obvious. The automated nature and number of steps in the process of Usami et al. '536 is held to render the use of computerized control obvious.

The applicant argues that a Graham v Deere analysis has not been performed and so the rejection does not clearly set forth what is taught by the references. The rejection makes it clear

Art Unit: 1795

the modifications to the primary reference and the motivation for them. These are the differences between the claimed invention and the prior art. Specifically, the Usami et al. '536 references, while teaching the formation of an optical recording medium in an automated processing line, including the formation of the substrate, the application of various coatings, including the UV coating of the protective layer and the inspection of the media, does not describe the label/marketing composition or the exposure steps related to that composition as this is described as the modification to that reference. This is clear from the statement of obviousness in the rejection and the discussion of the reference immediately above. Further it is clear that the Krasulak WO 99/65696 and Cescon et al. '454 using multiple exposures, one to write and another to cure the composition and fix the image, with this being used to form labels for optical recording media by Krasulak WO 99/65696. Cescon et al. '454 teaches multiple exposures with UV radiation to effect the writing and curing processes. Usami et al. '536 and Emge et al. '968 both teach automated conveyance between processing stations, such as two exposure stations or a coating and exposure station. The references are all within the imaging arts, so they are analogous.

**The examiner notes that the compositions are not considered part of the apparatus as the stations are identified as "unit for ...." or "configured for" except in the case of claim 52, which recites the composition as part of the apparatus, but does not further describe it. Embodiments where the each layer is coated, imaged and cured are found in [0372] of the prepub of the instant application. There is not exemplified or described in the specification an embodiment where multiple color forming layers are all coated and then imaged individually.**

This rejection does not embrace coating multiple color forming layers.

7. Claims 1,3-22,24-29, 44-46,48-50 and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '536, in view of Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968, further in view of Hagaki et al. '715 and Gaudinana et al. '118.

Hagaki et al. '715 teach with respect to figure 1, the automated process for forming optical recording media [0112-0116]. Figure 20 illustrated the use of a computer controller for the various processes, including transfer of the media, adhesive application, substrate inversion, UV bonding/curing and inspection. [0175].

Gaudinana et al. '118 describes the coating and exposure using three wavelengths at 30/54-34/29, where three color generating compositions are coated and either three lasers or three masking steps each of which occur at 450, 400 and 350 nm are used to direct write the pattern. (three sources). Examples 6 uses a 360 nm exposure through a filter source and a 440 nm exposure of a filtered Xenon arc (39/44-40/61). These include leuco dyes. The substrates may be transparent or opaque (29/47).

To address embodiment bounded by the claims, but not rendered obvious above, the examiner cites Hagaki et al. '715 and Gaudinana et al. '118 and holds that it would have been obvious to one skilled in the art to modify the apparatus rendered obvious by the combination of Usami et al. '536, Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968 as set forth above to modify the apparatus to coat three layers for different colors and provide exposure stations for each of the imaging and fixation/curing exposures to allow a continuous full color labeling process as taught by Gaudinana et al. '118 and to provide a means for inverting the optical recording medium such as that taught by Hagaki et al. '715 with a reasonable expectation



Art Unit: 1795

of success given that Hagaki et al. '715, Usami et al. '536 and Krasulak WO 99/65696 are all in the optical recording media art and Gaudinana et al. '118, Krasulak WO 99/65696 and Cescon et al. '454 are in the leuco dye art and all the of the cited references are in the imaging arts.

Further, it would have been obvious to have a controller to control the each of the stations and transport between them based upon the direction in Hagaki et al. '715 and the complexity of the apparatus illustrated in Usami et al. '536.

In response to the arguments, a 102 rejection represents a single embodiment bounded by the claims and as the reference was also able to render other embodiments bounded by the claims obvious, and so the use of the reference to reject claims which included those embodiments is reasonable and proper. The Gaudinana et al. '118 reference is relied upon in this instance to support the use of plural wavelengths for exposing compositions, which form different colors. The applicant's argument concerning pigments vs molecules neglects the paucity of the language found in the claims and the fact that except for claim 52, which lacks any recitation of specifics of the composition, the composition is not necessarily part of the apparatus. Further, the Cescon et al. '454 and Gaudinana et al. '118 use leuco dyes, which undercuts that position. Further the applicant fails to recognize that the claims are not to the process, but to the apparatus and so the arguments are somewhat off point. The applicant argues as if the coating apparatus could not coat either side. This is without merit, as it is a spin coater. Until the claims recites the formation of the substrate (claim 48), the apparatus need not show the ability to invert the medium as the functionality of the coating apparatus is the same. The fact that the claims recite a spin coating apparatus, which is taught in the prior art undercuts any argument that the prior art does not teach an apparatus for coating the medium on whatever is the topside.

Art Unit: 1795

8. Claims 1,3-22,24-29,44-46 and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usami et al. '536, in view of Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968, further in view of Tachikawa et al. '588.

Tachikawa et al. '588 teach a spin coater for coating UV curable films on optical recording media and operates at 50-500 RPM (7/50-57).

To address the embodiments bounded by the claims, but not rendered obvious above, the examiner holds that it would have been obvious to modify the system resulting from the combination of Usami et al. '536, in view of Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968 by using known spin coaters for coating UV curable compositions such as that disclosed by Tachikawa et al. '588 as operable at velocities of 50-5000 RPM with a reasonable expectation of the resultant system being able to produce the media formed by the combination of Usami et al. '536, in view of Krasulak WO 99/65696, Cescon et al. '454 and Emge et al. '968 based upon its prior use in the art to coat UV curable coatings

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lin et al. '242 teaches composition similar to those of the instant application, where the coloration and curing are simultaneous.

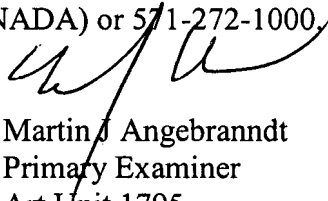
Teng et al. '305 teaches various photocurable composition, including those containing silicon containing acrylates (reactive surfactants) in table 1B (col 22).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Friday.

Art Unit: 1795

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J. Angebranndt  
Primary Examiner  
Art Unit 1795

10/25/2007